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Memorandum For:    The Record

From:                Lowell Fritz and Thomas Gelatt, NMML

Subject:             Surveys of Steller Sea Lions in Alaska, June-July 2010

**SUMMARY:** NMFS conducted surveys in summer 2010 to assess abundance, trends, and distribution of Steller sea lions (*Eumetopias jubatus*) in Alaska. An aerial photographic survey to assess adult and juvenile (non-pup) sea lions was conducted from southeast Alaska through Amchitka Pass in the Aleutian Islands from 7 June to 3 July 2010 using a NOAA Twin Otter aircraft. A second aerial survey was conducted from 10-13 July 2010 from the southwestern tip of the Kenai Peninsula through southeast Alaska to obtain a replicate, 'late' non-pup count to assess movement between the threatened eastern and endangered western distinct population segments (DPSs, or stocks) during the breeding season. An additional objective during the aerial surveys was to estimate pup production at sites surveyed at least 10 days after the mean sea lion birth date (which ranges between 4-14 June in Alaska). NMFS also counted pups and non-pups (on-site counts) at five rookeries and haulouts in the western Aleutian Islands on 22-24 June and counted pups at the Walrus Island rookery (near the Pribilof Islands in the Bering Sea) on 16 July using the USFWS RV *Tiglâx*.

It is not possible to provide an updated estimate of non-pup population trend for the entire western DPS in Alaska using the 2010 survey results due to the large number of trend sites missed because of weather and the closure of the runway at Eareckson Air Force Base on Shemya Island. However, even if we had surveyed all western DPS trend sites, determination of overall western DPS trend would have been affected, as it has been since 2008, by the apparent movement of animals during the breeding season between the eastern Gulf of Alaska and southeast Alaska. For the western DPS in Alaska, there continues to be considerable regional variability in non-pup abundance and pup production. Counts of pups and non-pups continue to decline in the western Aleutian (172°-177°E) and part of the central Aleutian Islands (177°W-180°). One site in the western Aleutians (Buldir) has ceased to function as a rookery and another (Attu/Cape Wrangell) will likely revert to a haulout within 5 years if the current rate of decline in pup production continues. By contrast, between 174°-177°W in the central Aleutian Islands, pup production at Kanaga, Adak, and Kasatochi rookeries has almost tripled since the early 1990s, and in the eastern Aleutians between 165°-170°W, trends in counts of both pups and non-pups are positive. But in between these increasing areas (from

170°-174°W), pup and non-pup counts have been stable since the mid-1990s. Similarly, the stable sea lion population in the central Gulf of Alaska is bordered by increasing populations in the western and eastern Gulf of Alaska. This pattern of regional population trends suggests that sea lions are responding less to ecosystem-wide environmental or anthropogenic forces, and more to forces that vary longitudinally and at meso-scales (~100-150 nm, or ~3-5° longitude).

## **METHODS**

### **Aerial Photographic Survey**

Aerial surveys for non-pup Steller sea lions are conducted in June and early July, when the greatest proportion of adults is onshore to give birth and breed. Both the threatened eastern DPS and endangered western DPS inhabit Alaska, with the former breeding on 5 rookeries east of 144°W in southeast Alaska (SEAK) and the latter on 39 rookeries between 144°W and 172°E. NMML estimates regional and stock-wide population trends by monitoring abundance at a group of ‘trend’ sites that have been consistently monitored and have had the majority (between 62-72% in SEAK, and between 88-96% in the western DPS) of all animals counted since 1991.

NMML divides the Alaska Steller sea lion range into various geographic regions and areas for the purpose of trend analysis (Figure 1). The original scheme (and that used in the Steller sea lion recovery plan; NMFS 2008) has 7 regions in Alaska: SEAK (part of the eastern DPS), plus 6 regions in the range of the western DPS: eastern, central and western Gulf of Alaska (E GULF, C GULF, and W GULF, respectively) and the eastern, central and western Aleutian Islands (E ALEU, C ALEU and W ALEU, respectively). Because of variation in trend that exists at finer scales than the traditional 7 regions, particularly in the Aleutian Islands, NMML developed an 11-area scheme, each composed of at least 2 rookeries and various numbers of trend haulouts; these areas are called rookery cluster areas, or RCAs.

The primary objective in 2010 was to survey all terrestrial rookery and haulout sites (N=366), plus each trend site (N=194) in Alaska from Dixon Entrance in SEAK (134°W) to Attu Island (172°E) at the western end of the Aleutian Islands during the initial non-pup survey (7 June – 3 July; Table 1; Figure 1). We successfully surveyed 137 trend sites (71%) and 259 sites overall (71%; Figure 1, Table 1). All trend sites and most of the sites overall were surveyed in RCAs 3-5 (from Amchitka Pass through the Islands of Four Mountains in the C ALEU) and RCAs 9-11 (Kodiak Island east through SEAK, which is the eastern half of the C GULF and all of the E GULF and SEAK). RCAs 6 (~E ALEU) and 8 (western half of the C GULF) were incompletely surveyed, and we were unable to survey any sites in RCAs 1 (W ALEU), 2 (Kiska Island to Amchitka Pass in the C ALEU), and 7 (~W GULF). Sites in RCAs 1 and 2 (42 sites overall and 28 trend sites) were missed because the airport at Eareckson Air Force Base on Shemya Island was unavailable to us while the runway was being resurfaced. Five trend sites in RCA 1 were surveyed from the ground during the RV *Tiglâx* trip on 22-24 June. Overall, 68 sites,

which includes 34 trend sites, were missed in RCAs 6-8 due to bad weather (e.g., fog, low ceilings, wind) and because of time lost for aircraft repair.

A secondary objective in 2010 was to re-survey all terrestrial rookery and haulout sites near the eastern DPS-western DPS boundary (RCAs 10 and 11) in early July to assess movement between the stocks during the breeding season. We successfully surveyed 69 of 106 sites overall (65%) and 34 of 36 trend sites (94%) during the movement survey on 10-13 July (Table 1; Figure 1), which is approximately 2.5 weeks later than the 'late' survey conducted in 2009 (24-27 June). During the initial non-pup survey, RCAs 10 and 11 were surveyed during 7-9 June, which is identical to the survey dates in this area in 2008. On 10-11 July 2010, all trend sites and all but two haulouts (which have had a total of only 13 sea lions counted in all surveys conducted from 2000-2010) were re-surveyed in RCA 10. Because of time constraints at the end of the contract time window, 29 sites in RCA 11 were not surveyed during the movement survey; these 29 sites had no animals during the initial 2010 non-pup survey and have had very low numbers during all breeding season surveys conducted since 2000. However, due to weather (fog) on the last survey day available, we were unable to survey 6 sites (including 2 trend rookeries at White Sisters and Graves Rock) that had a total of 4,592 non-pups (2,614 at the trend sites) during the initial survey.

A third objective in 2010 was to assess pup production at sites surveyed at least 10 days after the mean sea lion birth date in Alaska. From east to west in Alaska, mean birth dates are 4 June in SEAK, 14 June in the E GULF, and 11 June in the C GULF, W GULF and Aleutian Islands (Pitcher et al. 2001). A total of 33 sites with pup counts >0 were surveyed at least 10 days after the regional mean sea lion birth date.

We used a NOAA Twin Otter aircraft to conduct the survey. Sites with very low numbers of animals hauled out (< 10) were counted by observers on the aircraft. This occurred at 129 sites during the initial non-pup survey and at 30 sites during the movement survey. Sites with ten or more non-pups hauled out were photographed using three Canon EOS-1Ds Mark III digital cameras equipped with 85 mm manual focus Zeiss telephoto lenses mounted in the belly of the plane. The center camera was mounted vertically while the port and starboard cameras were mounted obliquely at a 21° angle, pointing inward towards the center camera. The cameras were mounted in a forward motion compensator (FMC) to minimize blur. The optimum survey altitude is 750 ft (which provided an approximate 1000 ft wide swath with the three cameras), but due to low ceilings, wind speeds, and topography some sites were photographed at altitudes ranging from 600-1300 ft. The desired ground speed was 90 kts, but ranged from 85-110 kts depending on wind speed and direction. Cameras were set to aperture priority (f5.6) and ISO to 800. Lenses were focused manually and set to near infinity.

Four researchers working independently counted all adult, juvenile and newborn Steller sea lions on land at each terrestrial site photographed during the 2010 survey. Sites were distributed among researchers to ensure a replicate count at each site. Sea lions were counted off digital photographs using high resolution monitors and Adobe Photoshop software (mention of specific products does not serve as an endorsement). Initial total

counts of non-pups (juveniles, adult females, sub-adult males and adult males) at each site by each researcher were compared; if the difference in total non-pup counts at a site was greater than 5%, counted photographs were compared to reconcile the discrepancies. A similar comparison and reconciliation occurred for all pup counts. If sea lions were disturbed into the water by the survey aircraft, every effort was made to count them, but animals that were in the water near undisturbed sites were not counted. Total counts of non-pups by the two teams of researchers at all sites surveyed in 2010 (~ 52,000 non-pups) differed by 0.7%. Total counts of pups (within the appropriate time frame) by the two teams in 2010 (~8,400 pups) differed by 1.6%. All pup and non-pup counts reported here are means of the replicate counts (rounded to the nearest whole pup) for each photographed site or the visual count recorded by the observer for those sites with few sea lions.

### **On-Site Pup and Non-Pup Counts**

Sea lion haulout and rookery sites were visited in the W ALEU during 22-24 June 2010 (Table 1), and at Walrus Island, one of the Pribilof Islands in the Bering Sea on 16 July 2010. Transport of the scientific gear and party was aboard the RV *Tiġlâx*, a 121' United States Fish and Wildlife Service research vessel used to support the Alaska Maritime Wildlife Refuge. When ashore, observers searched for dead pups and adults, and counted the numbers of non-pups and pups on land. Observations were conducted from a distance, usually downwind and with a good view of the rookery. Additionally, the scientific party made a general assessment of how to gain access to the rookery in a manner that was safe for the scientific party and minimized the level of disturbance associated with moving adult sea lions to the intertidal regions of the rookery – all the while keeping pups safe on the rookery.

## **RESULTS**

Counts of Steller sea lion non-pups from 2004-2010 at all western DPS trend sites are listed in Table 2 and at all western DPS non-trend (other) sites are listed in Table 3. Non-pup counts from 2002-2010 at all eastern DPS sites in SE AK are listed in Table 4. Surveys during each of these years employed high resolution, vertical photography. Pup counts at all rookeries in Alaska between 1990 and 2010, and at a small number of haulouts with >0 pups in 2010, are listed in Table 5.

### **Non-pup Counts by Recovery Plan Regions W ALEU through the C GULF**

We were unable to survey numerous trend sites in the W ALEU, C ALEU, E ALEU, and W GULF in 2010, and as a result, there is no new trend site total for the entire western DPS in Alaska. All trend sites were surveyed in the C GULF in 2010 resulting in a total slightly lower than in 2008 (Table 6A), and the trend in the C GULF region since 2000 remains stable ( $P>0.1$ ).

## Non-Pup Counts in RCAs 1-9

We were unable to survey numerous trend sites in RCAs 2 and 7 in 2010. However, there are enough data from the complete surveys in RCAs 3-5 and 9, and the partial surveys in RCAs 1, 6 and 8 to update many regional trends (Figure 2). From west to east by RCA:

- RCA 1: Counts in 2010 at all 4 rookeries and 1 haulout (the largest 5 of the 10 trend sites) indicate that the population is declining at -9% per year ( $P < 0.001$ ) since 1991.
- RCA 2 (Kiska through Amchitka): No new data for 2010; population declined at -6% per year ( $P < 0.001$ ) from 1991-2008.
- RCA 3 (Delarof Islands): Continued decline in trend site counts through 2010. Rate of decline from 2000 to 2010 has increased to -1.6% per year ( $P = 0.050$ ); it was -1% per year (stable;  $P = 0.243$ ) through 2008.
- RCA 4 (Tanaga through Atka): Counts were greater in 2010 than in 2008 (+438), but have been highly variable since 2000 and the trend is stable ( $P > 0.1$ ).
- RCA 5 (Amlia through Yunaska): Counts in 2010 were similar to 2008 (-65), and the trend since 2000 is stable ( $P > 0.1$ ).
- RCA 6 (similar to the E ALEU): Counts in 2010 in the western portion of RCA 6 from Samalga Pass through Unalaska Island are consistent with an increasing trend in this area. Counts in the central portion of RCA 6 (the Krenitzen Islands) increased faster from 2000 to 2008 than in the western portion of RCA 6. Counts have largely been stable in the Bering Sea portion of RCA 6 since the mid-1990s.
- RCA 7 (similar to the W GULF): No new data for 2010; population increased at 4.5% per year ( $P = 0.011$ ) from 2000-2008.
- RCA 8 (western half of the C GULF): Counts in 2010 at both rookeries and 4 of the 6 largest trend haulouts were greater than in 2008 (+194) but the trend since 2000 is stable ( $P > 0.1$ ).
- RCA 9 (eastern half of the C GULF): Counts in 2010 were 332 less than in 2008, but the trend since 2000 is stable ( $P > 0.1$ ).

## Non-Pup Counts in RCAs 10-11 (E GULF and SE AK): Movement Survey

In 2010, counts of non-pups at all sites in RCA 10 were 1,521 greater on 10-11 July than on 8-9 June; this was an increase of 34% in ~1 month (Tables 2-3; Figure 3). The increase at trend sites (+1,703, or 45%) was greater than that observed at all sites. The difference is primarily due to large increases in numbers at two trend haulouts, Cape St. Elias (+932) and Glacier Island (+563; Table 2). Seal Rocks rookery had the most animals of any single site in RCA 10 in early June (1,042), and had nearly identical numbers in July (1,036). Most of the increase between the two surveys, 75% at all sites and 88% at trend sites, occurred in the eastern portion of RCA 10 from Cape St. Elias through Prince William Sound.

A total of 15,776 non-pups were counted at all sites in SEAK (RCA 11) on 7-8 June, with 9,644 at trend sites (Table 4; Figure 3). On 12-13 July, a total of 10,803 non-pups were counted (6,155 at trend sites), but 6 sites (including 3 trend sites) could not be re-

surveyed. Non-pup counts in June on these 6 sites totaled 4,592 with 2,820 at the 3 trend sites, which represented 29% of all animals counted on SEAK sites during the June survey. Therefore, the July survey could have missed almost 1/3 of all animals in SEAK if they were distributed as they were in June. If we compare counts between June and July at only those sites surveyed in July, non-pup counts decreased 381 at all sites (-3%) and 868 (-12%) at trend sites.

## **Pup Counts**

The 2010 aerial survey was designed primarily to count non-pups across Alaska, but survey timing at certain sites was also suitable to assess pup production (Table 5; Figure 4). In addition, pups were counted on land in the W ALEU (=RCA 1) and at Walrus Island (Pribilof Islands) in the Bering Sea.

Pup counts in 2 of 6 western DPS recovery plan regions were updated in 2010 (Table 6B). In the W ALEU, pup production at the 4 rookeries in 2010 was 55 less than in 2008, and counts continue to decline at -10% per year ( $P=0.001$ ) since 1997. In the E GULF, pup production at Seal Rocks and Wooded (Fish) Island in 2010 was 60 less than in 2009, but pup production is increasing here at +4.7% per year ( $P=0.008$ ) since 2001-02.

From west to east by RCA:

- RCA 1 = W ALEU: Counts in 2010 at all 4 rookeries and 1 haulout indicate that pup production continues to decline at -10% per year ( $P=0.001$ ) since 1997. Buldir Island has ceased to function as a rookery, and if current trends continue, Attu/Cape Wrangell could also cease to function as a rookery within 5 years.
- RCA 2 (Kiska through Amchitka): No new data for 2010; pup production declined at -6% per year ( $P<0.001$ ) from 1991-2008 at the 4 rookeries in RCA 2.
- RCA 3 (Delarof Islands): Counts in 2010 at all 3 rookeries indicate that pup production continues to decline at -4% per year ( $P<0.001$ ) since 1991.
- RCA 4 (Tanaga through Atka): Pup counts at all 3 rookeries in 2010 were slightly lower than in 2009 (-58), but pup production has been increasing at +5% per year ( $P=0.003$ ) since 1990.
- RCA 5 (Amlia through Yunaska): Pup counts in 2010 at both rookeries were similar to 2009 (-7), and the trend since 1994 has been stable ( $P>0.1$ ).
- RCA 6 (E ALEU): Pup counts in 2010 at 2 of 7 rookeries in the E ALEU were 9% higher (+68) than in 2009, and pup production increased overall at +4.3% per year ( $P=0.023$ ) between 1998 and 2009.
- Walrus Island (Bering): Only 14 pups were counted on Walrus in 2010, a drop of over 50% since 2005. Pup production has been declining at Walrus at -10% per year ( $P<0.001$ ) since 1960 when 2,866 pups were counted, and this site has largely ceased to function as a rookery.
- RCA 7 (W GULF): No new data for 2010; pup production increased at +2.8% per year ( $P=0.033$ ) from 1998-2008 at the 4 rookeries in RCA 2.
- RCAs 8 and 9 (C GULF): No new data for the 4 rookeries in RCAs 8-9 in 2010; pup production was stable ( $P>0.1$ ) between 1998 and 2009.

- RCA 10 (E GULF): Pup counts at the 3 rookeries in 2010 were 60 lower than in 2009, but pup production has been increasing at +4.7% per year (P=0.008) since 2001-02. The pup count in 2010 at Outer Island rookery (part of the C GULF but in RCA 10) was identical to the number counted in 2009.
- RCA 11 (SEAK): Pup counts at 3 of 5 rookeries in 2010 were 2,041 lower in 2010 than in 2009. These included the two largest rookeries at Hazy and the Forrester Complex and the smallest rookery at Biali Rock. However, pup production at all 5 rookeries in SE AK increased at +3.5% per year (P=0.003) between 1991 and 2009.

## **DISCUSSION**

There continues to be considerable regional variability in non-pup abundance and pup production trends throughout the range of the western DPS of Steller sea lion in Alaska. This is particularly evident in the Aleutian Islands (RCAs 1-6). Pup and non-pup counts are both declining in all regions west of 177° W (RCAs 1-3, though there are no 2010 data for RCA 2), with trends worsening to the west. One site in the W ALEU (Buldir) had only a single pup in 2010 and has ceased to function as a rookery, while another (Attu/Cape Wrangell) will likely revert to a haulout within 5 years if the current rate of decline in pup production continues. By contrast, near the center of the Aleutian Islands in RCA 4, non-pup abundance has been variable but the trend has been stable since the early 1990s, while pup production at Kanaga, Adak, and Kasatochi rookeries has almost tripled. This is the only group of rookeries in AK west of Samalga Pass (a total of 16 rookeries, or ~40% of all rookeries in the western DPS in AK) that has had a statistically significant increase in pup production in the last two decades. Further to the east in RCA 6, both pup and non-pup trends are positive between Unimak Pass and Samalga Pass, but sandwiched between the increasing RCA 4 and the central/western portion of RCA 6 is RCA 5, where pups and non-pup counts have been stable since the mid-1990s. While only three sites were surveyed in the Bering Sea in 2010 (Amak, Sea Lion Rock, and Walrus Island), sea lion population trends are either stable or declining here as well. This contrasts with the rest of the E ALEU area west of Unimak Pass and the W GULF (RCA 7) which have both had significantly increasing trends since 2000. Similar to RCA 5, the stable sea lion populations in RCAs 8-9 (essentially the C GULF) are bordered by increasing populations to the west (RCA 7, or W GULF) and east (RCA 10, or E GULF). The pattern of regional population trends suggests that sea lions are responding less to ecosystem-wide environmental or anthropogenic forces, and more to forces that vary longitudinally and at meso-scales (~100 nm, or 3° longitude).

It is not possible to update our estimation of non-pup population trend for the entire western DPS using the 2010 survey results primarily due to the large number of trend sites missed in the W GULF, E ALEU, C ALEU and W ALEU. However, even if we had surveyed these sites, determination of overall western DPS trend would have been affected, as it has been since 2008, by the apparent movement of animals during the breeding season in the E GULF and SEAK areas. The initial hypothesis proposed in 2008 was that some eastern DPS animals were in the E GULF early in the breeding season, which led to higher than expected counts in this region during the early June 2008

survey. Results of the late June 2009 survey supported this hypothesis: E GULF non-pup counts were lower and the SE AK counts higher than in 2008. In 2010, we conducted both ‘early’ and ‘late’ surveys in the E GULF-SEAK area, but the results do not support the initial hypothesis: ‘early’ 2010 E GULF counts were substantially lower than ‘late’ counts, while the partial ‘late’ 2010 SEAK survey indicated slightly lower abundance than the complete ‘early’ survey. The difference in timing between the 2009 and 2010 ‘late’ surveys may have affected the distribution in these areas. However, the large variability in regional counts observed ~1 month apart in 2010 suggests that further research into the movement of animals across the DPS boundary prior to and during the breeding season is necessary before we can determine how this affects estimation of trends in the E GULF and SE AK, and ultimately on the western DPS as a whole.

On 12 July 2010 when the SE AK rookeries at Hazy, Biali and Forrester were surveyed, most of the pups were near the water in large groups. This not only made counting pups difficult (distinguishing wet black pups from wet black rocks), but some pups were likely in the water and not counted. In 2009, these 3 sites were surveyed 18 days earlier than in 2010 (on 24 June), and we counted a total of 6,156 pups in 2009 (vs. 4,115 in 2010). The 2005 (10 July) and the 2010 survey dates were similar, but 700 more pups were counted in 2005 than in 2010. Some of these differences could be due to mortality of pups in late June/early July, however only 93 dead pups were counted at these three rookeries in 2010 (though carcasses could have been washed into the sea or eaten/dispersed by scavengers). Researchers with the Alaska Department of Fish and Game’s field camp at Lowrie Island (part of the Forrester Complex), in a preliminary analysis, did not report significantly lower numbers of pups or non-pups in 2010 compared to recent previous years (L. Jemison, ADFG, personal communication, 31 January 2010). The 2010 pup counts at Hazy, Forrester Complex and Biali Rock reported here may therefore underestimate actual production in 2010 relative to other counts in the time series, and surveys in subsequent years should help address this issue.

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Table 1. Number of terrestrial Steller sea lion rookery and haulout sites by region, rookery cluster area, in the western DPS (wDPS), and in Alaska overall, and those surveyed during the 2010 non-pup (A) and movement (B) aerial surveys (Figure 1).

**A. Non-Pup Survey (7 June-3 July 2010)**

| Region   |       |          |      |             |          |      | Rookery Cluster Area (RCA) |       |          |      |             |          |      |
|----------|-------|----------|------|-------------|----------|------|----------------------------|-------|----------|------|-------------|----------|------|
| Region   | Sites | Surveyed | %    | Trend Sites | Surveyed | %    | RCA                        | Sites | Surveyed | %    | Trend Sites | Surveyed | %    |
| SEAK     | 67    | 67       | 100% | 17          | 17       | 100% | 11                         | 69    | 69       | 100% | 17          | 17       | 100% |
| E GULF   | 30    | 30       | 100% | 13          | 13       | 100% | 10                         | 37    | 37       | 100% | 19          | 19       | 100% |
| C GULF   | 58    | 56       | 97%  | 33          | 32       | 97%  | 9                          | 30    | 30       | 100% | 20          | 20       | 100% |
|          |       |          |      |             |          |      | 8                          | 26    | 20       | 77%  | 11          | 7        | 64%  |
| W GULF   | 41    | 3        | 7%   | 21          | 1        | 5%   | 7                          | 34    | 0        | 0%   | 17          | 0        | 0%   |
| E ALEU   | 61    | 33       | 54%  | 32          | 20       | 63%  | 6                          | 64    | 36       | 56%  | 35          | 22       | 63%  |
| C ALEU   | 94    | 65       | 69%  | 66          | 49       | 74%  | 5                          | 18    | 18       | 100% | 17          | 17       | 100% |
|          |       |          |      |             |          |      | 4                          | 25    | 25       | 100% | 16          | 16       | 100% |
|          |       |          |      |             |          |      | 3                          | 20    | 19       | 95%  | 14          | 14       | 100% |
|          |       |          |      |             |          |      | 2                          | 28    | 0        | 0%   | 16          | 0        | 0%   |
| W ALEU   | 15    | 5        | 33%  | 12          | 5        | 42%  | 1                          | 15    | 5        | 33%  | 12          | 5        | 42%  |
| WDPS     | 299   | 192      | 64%  | 177         | 120      | 68%  | WDPS                       | 297   | 190      | 62%  | 177         | 120      | 68%  |
| AK Total | 366   | 259      | 71%  | 194         | 137      | 71%  | AK Total                   | 366   | 259      | 71%  | 194         | 137      | 71%  |

**B. Movement Survey (10-13 July)**

| Region   |       |          |      |             |          |      | Rookery Cluster Area (RCA) |       |          |     |             |          |      |
|----------|-------|----------|------|-------------|----------|------|----------------------------|-------|----------|-----|-------------|----------|------|
| Region   | Sites | Surveyed | %    | Trend Sites | Surveyed | %    | RCA                        | Sites | Surveyed | %   | Trend Sites | Surveyed | %    |
| SEAK     | 67    | 34       | 51%  | 17          | 15       | 83%  | 11                         | 69    | 34       | 49% | 17          | 15       | 88%  |
| E GULF   | 30    | 26       | 87%  | 13          | 13       | 100% | 10                         | 37    | 35       | 95% | 19          | 19       | 100% |
| C GULF   | 9     | 9        | 100% | 6           | 6        | 100% |                            |       |          |     |             |          |      |
| WDPS     | 39    | 35       | 90%  | 19          | 19       | 100% | WDPS                       | 37    | 35       | 95% | 19          | 19       | 100% |
| AK Total | 106   | 69       | 65%  | 36          | 34       | 92%  | AK Total                   | 106   | 69       | 65% | 36          | 34       | 94%  |

Table 2. Counts of adult and juvenile Steller sea lions at rookery (in bold) and haulout trend sites, 2004-2010. 2010E refers to the non-pup survey conducted 7 June-3 July 2010; 2010L refers to the movement survey conducted 10-13 July 2010. Counts in 2010 in the western Aleutian Islands (W ALEU) are ground counts from RV *Tiglax* trip; all others from aerial survey using high-resolution, vertical photographs

| <b>SITE NAME</b>         | <b>REGION</b> | <b>RCA</b> | <b>2004</b> | <b>2006</b> | <b>2007</b> | <b>2008</b> | <b>2009</b> | <b>2010E</b> | <b>2010L</b> |
|--------------------------|---------------|------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|
| CAPE ST. ELIAS           | E GULF        | 10         | 318         | 414         | 728         | 1,400       | 714         | 558          | 1,490        |
| CAPE HINCHINBROOK        | E GULF        | 10         | 496         | 237         | 95          | 229         | 102         | 161          | 0            |
| <b>SEAL ROCKS</b>        | E GULF        | 10         | 841         | 1,119       | 803         | 1,024       | 1,007       | 1,042        | 1,036        |
| <b>WOODED (FISH)</b>     | E GULF        | 10         | 523         | 619         | 282         | 603         | 663         | 634          | 886          |
| GLACIER                  | E GULF        | 10         | 620         | 466         | 531         | 509         | 724         | 564          | 1,127        |
| THE NEEDLE               | E GULF        | 10         | 123         | 127         | 145         | 88          | 112         | 111          | 66           |
| POINT ELRINGTON          | E GULF        | 10         | 132         | 58          | 37          | 169         | 162         | 81           | 38           |
| CAPE PUGET               | E GULF        | 10         | 0           | 0           | 0           | 0           | 10          | 1            | 0            |
| CAPE FAIRFIELD           | E GULF        | 10         | 0           | 0           | 10          | 47          | 32          | 27           | 11           |
| RUGGED                   | E GULF        | 10         | 0           | 0           | 0           | 8           | 2           | 0            | 7            |
| ALEUALIK CAPE            | E GULF        | 10         | 1           | 103         | 161         | 77          | 88          | 74           | 100          |
| <b>CHISWELL ISLANDS</b>  | E GULF        | 10         | 72          | 71          | 74          | 68          | 94          | 68           | 186          |
| SEAL ROCKS (KENAI)       | E GULF        | 10         | 3           | 4           | 2           | 0           | 13          | 4            | 58           |
| <b>OUTER (PYE)</b>       | C GULF        | 10         | 222         | 251         | 268         | 249         | 231         | 269          | 435          |
| GORE POINT               | C GULF        | 10         | 0           | 0           | 0           | 0           | 0           | 0            | 0            |
| EAST CHUGACH             | C GULF        | 10         | 0           |             | 0           | 0           | 0           | 0            | 0            |
| PERL                     | C GULF        | 10         | 49          |             | 241         | 144         | 151         | 217          | 74           |
| NAGAHUT ROCKS            | C GULF        | 10         | 1           |             | 2           | 21          | 0           | 0            | 0            |
| ELIZABETH/CAPE ELIZABETH | C GULF        | 10         | 28          |             | 0           | 0           | 0           | 0            | 0            |
| <b>SUGARLOAF</b>         | C GULF        | 9          | 667         | 733         | 662         | 849         | 844         | 788          |              |
| USHAGAT/NW               | C GULF        | 9          | 3           | 0           | 0           | 0           | 0           | 0            |              |
| <b>USHAGAT/SW</b>        | C GULF        | 9          | 101         | 141         | 74          | 96          | 88          | 86           |              |
| USHAGAT/ROCKS SOUTH      | C GULF        | 9          | 8           | 9           | 0           | 45          | 29          | 28           |              |
| LATAK ROCKS              | C GULF        | 9          | 56          |             | 115         | 108         | 334         | 128          |              |
| SEA OTTER                | C GULF        | 9          | 127         |             | 100         | 1           | 7           | 6            |              |
| RK NEAR SEA OTTER        | C GULF        | 9          | 10          |             | 0           | 47          | 20          | 0            |              |

| <b>Table 2 (continued) SITE NAME</b> | <b>REGION</b> | <b>RCA</b> | <b>2004</b> | <b>2006</b> | <b>2007</b> | <b>2008</b> | <b>2009</b> | <b>2010E</b> | <b>2010L</b> |
|--------------------------------------|---------------|------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|
| AFOGNAK/TONKI CAPE                   | C GULF        | 9          | 0           |             | 0           | 16          | 2           | 0            |              |
| SEA LION ROCKS (MARMOT)              | C GULF        | 9          | 2           |             | 1           | 13          | 2           | 0            |              |
| <b>MARMOT</b>                        | C GULF        | 9          | 703         | 686         | 551         | 644         | 749         | 576          |              |
| LONG ISLAND                          | C GULF        | 9          | 32          |             |             | 59          | 39          | 0            |              |
| KODIAK/CAPE CHINIAK                  | C GULF        | 9          | 87          |             | 241         | 130         | 117         | 110          |              |
| UGAK                                 | C GULF        | 9          | 0           |             | 0           | 0           | 0           | 0            |              |
| KODIAK/GULL POINT                    | C GULF        | 9          | 109         |             | 148         | 109         | 89          | 72           |              |
| KODIAK/CAPE BARNABAS                 | C GULF        | 9          | 0           |             | 140         | 84          | 130         | 194          |              |
| TWOHEADED                            | C GULF        | 9          | 266         |             | 228         | 204         | 251         | 244          |              |
| SITKINAK/CAPE SITKINAK               | C GULF        | 9          | 80          |             | 104         | 115         | 63          | 76           |              |
| KODIAK/CAPE UGAT                     | C GULF        | 9          | 2           | 167         | 248         | 285         | 270         | 140          |              |
| KODIAK/STEEP CAPE                    | C GULF        | 9          | 0           | 14          | 61          | 38          |             | 24           |              |
| SHAKUN ROCKS                         | C GULF        | 9          | 104         | 67          | 113         | 81          |             | 117          |              |
| TAKLI                                | C GULF        | 8          | 85          | 157         | 92          | 67          |             | 74           |              |
| PUALE BAY                            | C GULF        | 8          | 58          | 2           | 1           | 2           |             | 84           |              |
| UG ALEUUSHAK                         | C GULF        | 8          | 0           | 0           | 2           | 0           |             |              |              |
| SUTWIK                               | C GULF        | 8          | 206         | 114         | 127         | 93          | 106         | 148          |              |
| CHOWIET                              | C GULF        | 8          | 541         |             | 424         | 559         | 644         | 653          |              |
| CHIRIKOF                             | C GULF        | 8          | 303         |             | 300         | 300         | 430         | 262          |              |
| NAGAI ROCKS                          | C GULF        | 8          | 330         |             | 449         | 234         | 218         | 201          |              |
| <b>CHERNABURA</b>                    | W GULF        | 7          | 828         |             | 1,228       | 1,281       | 1,162       |              |              |
| <b>LIGHTHOUSE ROCKS</b>              | W GULF        | 8          | 111         | 153         | 152         | 164         | 123         |              |              |
| KAK                                  | W GULF        | 8          | 17          | 24          |             | 1           |             | 27           |              |
| MITROFANIA                           | W GULF        | 8          | 182         | 103         | 116         | 129         |             |              |              |
| SPITZ                                | W GULF        | 8          | 1           | 0           | 11          | 1           |             |              |              |
| KUPREANOF POINT                      | W GULF        | 7          | 53          | 116         | 53          | 72          |             |              |              |
| CASTLE ROCK                          | W GULF        | 7          | 70          | 15          | 38          | 28          |             |              |              |
| <b>ATKINS</b>                        | W GULF        | 7          | 651         | 663         | 585         | 558         | 631         |              |              |
| THE HAYSTACKS                        | W GULF        | 7          | 38          | 1           | 41          | 3           |             |              |              |
| THE WHALEBACK                        | W GULF        | 7          | 102         | 99          | 83          | 102         | 103         |              |              |
| NAGAI/MOUNTAIN POINT                 | W GULF        | 7          | 80          | 56          | 148         | 60          |             |              |              |

| <b>Table 2 (continued) SITE NAME</b> | <b>REGION</b> | <b>RCA</b> | <b>2004</b> | <b>2006</b> | <b>2007</b> | <b>2008</b> | <b>2009</b> | <b>2010E</b> | <b>2010L</b> |
|--------------------------------------|---------------|------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|
| SEA LION ROCKS (SHUMAGINS)           | W GULF        | 7          | 36          | 142         | 44          | 54          |             |              |              |
| UNGA/ACHEREDIN POINT                 | W GULF        | 7          | 264         | 152         | 229         | 202         |             |              |              |
| <b>JUDE</b>                          | W GULF        | 7          | 474         | 338         | 445         | 465         | 512         |              |              |
| <b>PINNACLE ROCK</b>                 | W GULF        | 7          | 1,011       | 1,167       | 1,057       | 1,094       | 1,132       |              |              |
| <b>CLUBBING ROCKS</b>                | W GULF        | 7          | 911         | 1,037       | 1,063       | 952         | 1,023       |              |              |
| CHERNI                               | W GULF        | 7          | 0           | 0           | 0           | 0           |             |              |              |
| SOUTH ROCKS                          | W GULF        | 7          | 528         | 320         | 457         | 451         | 434         |              |              |
| BIRD                                 | W GULF        | 7          | 57          | 62          | 97          | 155         |             |              |              |
| ROCK                                 | W GULF        | 7          | 17          | 0           | 0           | 0           |             |              |              |
| UNIMAK/CAPE SARICHEF                 | E ALEU        | 6          | 250         | 6           | 0           | 167         | 1           |              |              |
| AMAK+ROCKS                           | E ALEU        | 6          | 733         | 410         | 220         | 265         | 324         | 366          |              |
| <b>SEA LION ROCK (AMAK)</b>          | E ALEU        | 6          | 456         | 447         | 385         | 360         | 314         | 436          |              |
| <b>UGAMAK COMPLEX</b>                | E ALEU        | 6          | 1,304       | 1,319       | 1,493       | 1,619       | 1,874       |              |              |
| AIKTAK                               | E ALEU        | 6          | 101         | 111         | 43          | 42          | 61          |              |              |
| TIGALDA/ROCKS NE                     | E ALEU        | 6          | 141         | 202         | 236         | 359         | 229         |              |              |
| TIGALDA/SOUTH SIDE                   | E ALEU        | 6          | 46          | 83          | 105         | 91          |             |              |              |
| ROOTOK                               | E ALEU        | 6          | 96          | 96          | 141         | 60          |             |              |              |
| TANGINAK                             | E ALEU        | 6          | 4           | 6           | 4           | 1           |             |              |              |
| <b>AKUN/BILLINGS HEAD</b>            | E ALEU        | 6          | 307         | 338         | 523         | 386         |             |              |              |
| AKUTAN/REEF-LAVA                     | E ALEU        | 6          | 119         | 103         | 57          | 128         | 166         | 98           |              |
| <b>AKUTAN/CAPE MORGAN</b>            | E ALEU        | 6          | 1,021       | 1,249       | 1,172       | 1,135       | 905         | 1,298        |              |
| OLD MAN ROCKS                        | E ALEU        | 6          | 71          | 112         | 81          | 89          |             | 196          |              |
| EGG                                  | E ALEU        | 6          | 5           | 0           | 0           | 0           |             | 84           |              |
| OUTER SIGNAL                         | E ALEU        | 6          | 0           | 0           | 0           | 10          |             | 52           |              |
| UNALASKA/CAPE SEDANKA                | E ALEU        | 6          | 0           | 0           | 0           | 0           |             | 0            |              |
| UNALASKA/BISHOP POINT                | E ALEU        | 6          | 265         | 285         | 196         | 204         | 195         | 240          |              |
| UNALASKA/MAKUSHIN BAY                | E ALEU        | 6          | 20          | 88          | 154         | 115         |             | 56           |              |
| UNALASKA/SPRAY CAPE                  | E ALEU        | 6          | 0           | 0           | 0           | 0           |             | 0            |              |
| UNALASKA/CAPE IZIGAN                 | E ALEU        | 6          | 238         | 329         | 304         | 188         | 456         | 435          |              |
| <b>BOGOSLOF/FIRE ISLAND</b>          | E ALEU        | 6          | 380         | 358         | 405         | 390         | 399         | 434          |              |
| UMNAK/CAPE ASLIK                     | E ALEU        | 6          | 119         | 73          |             | 63          |             | 78           |              |

| <b>Table 2 (continued) SITE NAME</b> | <b>REGION</b> | <b>RCA</b> | <b>2004</b> | <b>2006</b> | <b>2007</b> | <b>2008</b> | <b>2009</b> | <b>2010E</b> | <b>2010L</b> |
|--------------------------------------|---------------|------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|
| POLIVNOI ROCK                        | E ALEU        | 6          | 91          | 42          | 96          | 93          |             | 136          |              |
| THE PILLARS                          | E ALEU        | 6          | 4           | 0           | 0           | 0           |             | 15           |              |
| <b>OGCHUL</b>                        | E ALEU        | 6          | 139         | 132         | 152         | 200         | 224         | 268          |              |
| VSEVIDOF                             | E ALEU        | 6          | 48          | 41          | 35          | 50          |             | 75           |              |
| <b>ADUGAK</b>                        | E ALEU        | 6          | 259         | 429         | 473         | 636         | 620         | 564          |              |
| ULIAGA                               | C ALEU        | 6          | 0           | 99          |             | 66          |             | 216          |              |
| KAGAMIL                              | C ALEU        | 6          | 1           | 0           |             | 0           |             | 51           |              |
| CHUGINADAK                           | C ALEU        | 6          | 129         | 79          |             | 53          |             | 173          |              |
| CARLISLE                             | C ALEU        | 5          | 0           | 0           |             | 27          |             | 10           |              |
| HERBERT                              | C ALEU        | 5          | 38          | 66          |             | 105         |             | 67           |              |
| <b>YUNASKA</b>                       | C ALEU        | 5          | 260         | 255         | 279         | 282         | 298         | 403          |              |
| CHAGULAK                             | C ALEU        | 5          | 0           | 13          |             | 59          |             | 54           |              |
| AMUKTA+ROCKS                         | C ALEU        | 5          | 2           | 18          | 56          | 35          |             | 72           |              |
| SEGUAM/FINCH POINT                   | C ALEU        | 5          | 2           |             | 0           | 0           |             | 0            |              |
| SEGUAM/SW RIP                        | C ALEU        | 5          | 40          |             | 31          | 39          |             | 30           |              |
| <b>SEGUAM/SADDLERIDGE</b>            | C ALEU        | 5          | 923         |             | 668         | 835         | 857         | 756          |              |
| SEGUAM/TURF POINT                    | C ALEU        | 5          | 58          |             | 8           | 3           | 13          | 7            |              |
| SEGUAM/LAVA COVE                     | C ALEU        | 5          | 0           |             | 0           | 0           |             | 0            |              |
| SEGUAM/LAVA POINT                    | C ALEU        | 5          | 5           |             | 0           | 0           |             | 0            |              |
| SEGUAM/WHARF POINT                   | C ALEU        | 5          | 90          |             | 121         | 49          |             | 69           |              |
| AGLIGADAK                            | C ALEU        | 5          | 61          |             | 15          | 14          | 11          | 38           |              |
| AMLIA/EAST CAPE                      | C ALEU        | 5          | 34          |             | 55          | 117         |             | 63           |              |
| AMLIA/SVIECH. HARBOR                 | C ALEU        | 5          | 144         |             | 113         | 100         | 192         | 120          |              |
| TANADAK (AMLIA)                      | C ALEU        | 5          | 1           |             | 0           | 30          |             | 12           |              |
| SAGIGIK                              | C ALEU        | 5          | 30          |             | 10          | 14          |             | 40           |              |
| ATKA/NORTH CAPE                      | C ALEU        | 4          | 383         | 279         | 140         | 32          |             | 206          |              |
| ATKA/CAPE KOROVIN                    | C ALEU        | 4          | 4           | 0           | 30          | 39          |             | 6            |              |
| SALT                                 | C ALEU        | 4          | 0           |             | 0           | 4           |             | 7            |              |
| <b>KASATOCHI/NORTH POINT</b>         | C ALEU        | 4          | 667         | 610         | 613         | 550         | 609         | 732          |              |
| OGLODAK                              | C ALEU        | 4          | 86          | 111         | 58          | 99          | 86          | 86           |              |
| IKIGINAK                             | C ALEU        | 4          | 0           | 8           | 16          | 0           |             | 0            |              |

| Table 2 (continued) SITE NAME | REGION | RCA | 2004  | 2006 | 2007 | 2008 | 2009 | 2010E | 2010L |
|-------------------------------|--------|-----|-------|------|------|------|------|-------|-------|
| FENIMORE                      | C ALEU | 4   | 30    | 10   | 9    | 4    |      | 29    |       |
| ANAGAKSIK                     | C ALEU | 4   | 2     | 52   | 14   | 20   |      | 30    |       |
| GREAT SITKIN                  | C ALEU | 4   | 0     | 0    | 0    | 0    |      | 0     |       |
| LITTLE TANAGA STRAIT          | C ALEU | 4   | 49    |      | 15   | 36   |      | 26    |       |
| KAGALASKA                     | C ALEU | 4   | 48    | 0    | 3    | 42   |      | 52    |       |
| <b>ADAK</b>                   | C ALEU | 4   | 1,008 |      | 779  | 621  | 596  | 715   |       |
| KANAGA/N CAPE                 | C ALEU | 3   | 7     | 13   | 2    | 14   |      | 0     |       |
| KANAGA/CAPE MIGA              | C ALEU | 3   | 0     | 0    | 0    | 0    |      | 27    |       |
| <b>KANAGA/SHIP ROCK</b>       | C ALEU | 3   | 229   |      | 331  | 322  | 420  | 372   |       |
| TANAGA/BUMPY POINT            | C ALEU | 3   | 33    |      | 33   | 22   |      | 46    |       |
| TANAGA/CAPE SASMIK            | C ALEU | 3   | 122   |      | 63   | 95   |      | 96    |       |
| <b>GRAMP ROCK</b>             | C ALEU | 3   | 679   |      |      | 593  | 442  | 504   |       |
| UGIDAK                        | C ALEU | 3   | 25    |      |      | 16   |      | 4     |       |
| <b>TAG</b>                    | C ALEU | 3   | 242   |      |      | 255  | 235  | 212   |       |
| KAVALGA                       | C ALEU | 3   | 56    |      |      | 63   |      | 4     |       |
| UNALGA+DINKUM ROCKS           | C ALEU | 3   | 19    |      |      | 0    |      | 0     |       |
| ULAK/HASGOX POINT             | C ALEU | 3   | 531   |      |      | 537  | 515  | 470   |       |
| AMATIGNAK/KNOB POINT          | C ALEU | 3   | 1     |      | 0    | 3    |      | 0     |       |
| AMATIGNAK/NITROF POINT        | C ALEU | 3   | 76    | 38   |      | 49   |      | 46    |       |
| SEMISOPOCHNOI/POCHNOI         | C ALEU | 2   | 55    | 41   |      | 32   | 36   |       |       |
| AMCHITKA/CAPE IVAKIN          | C ALEU | 2   | 0     | 0    | 0    | 0    |      |       |       |
| AMCHITKA/EAST CAPE            | C ALEU | 2   | 178   | 103  |      | 103  | 71   |       |       |
| AMCHITKA/ST. MAKARIUS         | C ALEU | 2   | 0     | 0    | 0    | 0    |      |       |       |
| <b>AMCHITKA/COLUMN ROCK</b>   | C ALEU | 2   | 85    |      |      | 71   | 69   |       |       |
| <b>AYUGADAK</b>               | C ALEU | 2   | 152   |      |      | 152  | 113  |       |       |
| RAT                           | C ALEU | 2   | 45    |      |      | 0    |      |       |       |
| SEA LION ROCK (KISKA)         | C ALEU | 2   | 0     |      |      | 0    |      |       |       |
| TANADAK (KISKA)               | C ALEU | 2   | 34    |      |      | 1    |      |       |       |
| KISKA/SOBAKA-VEGA             | C ALEU | 2   | 101   |      |      | 52   |      |       |       |
| <b>KISKA/CAPE ST STEPHEN</b>  | C ALEU | 2   | 210   |      |      | 229  | 205  |       |       |
| <b>KISKA/LIEF COVE</b>        | C ALEU | 2   | 170   |      |      | 162  | 152  |       |       |
| KISKA/PILLAR ROCK             | C ALEU | 2   | 0     |      |      | 0    |      |       |       |

| <b>Table 2 (continued) SITE NAME</b> | <b>REGION</b> | <b>RCA</b> | <b>2004</b> | <b>2006</b> | <b>2007</b> | <b>2008</b> | <b>2009</b> | <b>2010E</b> | <b>2010L</b> |
|--------------------------------------|---------------|------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|
| <b>BULDIR</b>                        | W ALEU        | 1          | 108         |             |             | 43          |             | 25           |              |
| SHEMYA                               | W ALEU        | 1          | 17          | 18          |             | 4           |             |              |              |
| ALOID                                | W ALEU        | 1          | 125         | 86          |             | 86          |             | 95           |              |
| <b>AGATTU/CAPE SABAK</b>             | W ALEU        | 1          | 325         | 282         |             | 202         |             | 178          |              |
| <b>AGATTU/GILLON POINT</b>           | W ALEU        | 1          | 374         | 308         |             | 281         |             | 237          |              |
| ATTU/MASSACRE BAY                    | W ALEU        | 1          | 0           | 0           |             | 0           |             |              |              |
| ATTU/CHIRIKOF POINT                  | W ALEU        | 1          | 75          | 30          |             | 42          |             |              |              |
| ATTU/CHICHAGOF POINT                 | W ALEU        | 1          | 54          | 13          |             | 25          |             |              |              |
| ATTU/KRESTA POINT                    | W ALEU        | 1          | 0           | 0           |             | 0           |             |              |              |
| <b>ATTU/CAPE WRANGELL</b>            | W ALEU        | 1          | 257         | 260         |             | 247         |             | 190          |              |
| Western Trend Site Counts            |               |            | 27,437      | 19,058      | 23,144      | 28,185      | 24,329      | 19,256       | 5,514        |
| Other Western Site Counts (Table 3)  |               |            | 1,600       | 2,231       | 3,012       | 3,060       | 1,125       | 1,439        | 540          |
| SEAK Counts (Table 4)                |               |            |             |             |             | 14,344      | 16,986      | 15,776       | 10,803       |
| Total Alaska Count                   |               |            | 29,037      | 21,289      | 26,156      | 45,589      | 42,439      | 36,471       | 16,857       |

Table 3. Counts of adult and juvenile Steller sea lions at non-trend (other) sites, 2004-2010. 2010E refers to the non-pup survey conducted 7 June-3 July 2010; 2010L refers to the movement survey conducted 10-13 July 2010. All are aerial survey counts from high resolution, vertical photographs.

| <b>SITE NAME</b>      | <b>REGION</b> | <b>RCA</b> | <b>2004</b> | <b>2006</b> | <b>2007</b> | <b>2008</b> | <b>2009</b> | <b>2010E</b> | <b>2010L</b> |
|-----------------------|---------------|------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|
| HOOK POINT            | E GULF        | 10         | 96          | 101         | 132         | 261         | 0           | 384          | 0            |
| STEEP POINT           | E GULF        | 10         | 1           | 63          | 90          | 92          | 88          | 107          | 86           |
| MIDDLETON             | E GULF        | 10         | 4           | 0           | 0           | 0           | 0           | 0            | 0            |
| POINT ELEANOR         | E GULF        | 10         |             | 0           | 0           | 0           | 0           | 0            | 0            |
| PERRY                 | E GULF        | 10         |             | 218         | 437         | 227         | 0           | 0            | 0            |
| PLEIADES              | E GULF        | 10         |             | 0           | 0           | 0           | 0           | 0            | 0            |
| POINT LaTOUCHE        | E GULF        | 10         | 0           | 0           | 0           | 0           | 0           | 0            | 0            |
| DANGER                | E GULF        | 10         | 12          | 10          | 119         | 2           | 1           | 0            | 160          |
| PROCESSION ROCKS      | E GULF        | 10         | 36          | 67          | 77          | 102         | 113         | 185          | 72           |
| CAPE JUNKEN           | E GULF        | 10         | 0           | 0           | 0           | 0           | 1           | 0            | 0            |
| CAPE RESURRECTION     | E GULF        | 10         | 3           | 0           | 12          |             | 169         | 0            | 158          |
| GROTTO (NATOA) ISLAND | E GULF        | 10         |             |             |             |             |             | 46           | 63           |
| GRANITE CAPE          | E GULF        | 10         | 1           | 89          | 25          | 4           | 5           | 0            | 1            |
| RABBIT                | E GULF        | 10         | 0           | 0           | 0           | 0           | 0           | 0            | 0            |
| FLAT                  | C GULF        | 10         | 4           |             | 44          | 0           |             | 0            | 0            |
| SHAW                  | C GULF        | 9          | 81          | 162         | 1           | 0           |             | 0            |              |
| NUKA POINT            | C GULF        | 10         | 0           | 0           | 0           | 0           |             | 0            | 0            |
| PERL ROCKS            | C GULF        | 10         | 0           |             | 0           | 0           |             | 0            | 0            |
| WEST AMATULI          | C GULF        | 9          | 0           | 0           | 0           | 0           |             | 0            |              |
| SUD                   | C GULF        | 9          | 0           | 0           | 0           | 0           |             | 0            |              |
| KODIAK/CAPE PARAMANOF | C GULF        | 9          | 0           | 0           | 0           | 0           |             | 0            |              |
| CAPE DOUGLAS          | C GULF        | 9          | 0           | 0           | 0           | 0           |             | 0            |              |
| KODIAK/MALINA POINT   | C GULF        | 9          | 0           | 0           | 0           | 0           |             | 0            |              |
| NOISY                 | C GULF        | 9          | 0           | 0           | 0           | 0           |             | 0            |              |
| KODIAK/CAPE KULIUK    | C GULF        | 9          | 0           | 0           | 0           | 0           |             | 0            |              |
| KODIAK/BIRD ROCK      | C GULF        | 9          |             |             |             |             |             | 108          |              |
| CAPE NUKSHAK          | C GULF        | 9          | 0           | 0           | 0           | 0           |             | 0            |              |

| <b>Table 3 (continued) SITE NAME</b> | <b>REGION</b> | <b>RCA</b> | <b>2004</b> | <b>2006</b> | <b>2007</b> | <b>2008</b> | <b>2009</b> | <b>2010E</b> | <b>2010L</b> |
|--------------------------------------|---------------|------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|
| CAPE UGYAK                           | C GULF        | 8          | 0           | 0           | 0           | 0           |             | 0            |              |
| KODIAK/SUNDSTROM                     | C GULF        | 8          | 0           |             | 0           | 0           |             | 0            |              |
| CAPE GULL                            | C GULF        | 8          | 0           | 0           | 0           | 0           |             | 0            |              |
| CAPE KULIAK                          | C GULF        | 8          |             | 0           | 4           | 0           |             | 0            |              |
| KODIAK/CAPE ALITAK                   | C GULF        | 8          | 0           |             | 0           | 0           |             | 0            |              |
| KODIAK/CAPE UYAK                     | C GULF        | 8          |             | 0           | 0           | 0           |             | 0            |              |
| KODIAK/STURGEON HEAD                 | C GULF        | 8          |             | 0           | 0           | 0           |             | 0            |              |
| KODIAK/CAPE IKOLIK                   | C GULF        | 8          | 108         | 52          | 33          | 57          |             | 86           |              |
| KODIAK/TOMBSTONE ROCKS               | C GULF        | 8          | 0           | 0           | 0           | 0           |             | 0            |              |
| KILOKAK ROCKS                        | C GULF        | 8          | 85          | 144         | 198         | 101         |             | 142          |              |
| AIUGNAK COLUMNS                      | C GULF        | 8          | 1           | 24          | 7           | 3           |             |              |              |
| AGHIYUK                              | C GULF        | 8          | 27          | 5           | 9           | 0           |             | 0            |              |
| OLGA ROCKS NE                        | W GULF        | 7          | 11          | 28          | 36          | 48          |             |              |              |
| OLGA ROCKS SW                        | W GULF        | 7          | 117         | 102         | 95          | 128         |             |              |              |
| SUSHILNOI ROCKS                      | W GULF        | 7          | 290         | 327         | 289         | 286         | 398         |              |              |
| CATON                                | W GULF        | 7          | 109         | 368         | 416         | 542         |             |              |              |
| ATKULIK                              | W GULF        | 8          | 0           | 0           |             | 0           |             | 0            |              |
| CHANKLIUT                            | W GULF        | 8          | 0           | 0           |             | 0           |             | 0            |              |
| SEAL CAPE                            | W GULF        | 8          | 0           | 0           |             | 0           |             |              |              |
| BIG KONIUJI                          | W GULF        | 7          | 0           | 0           | 0           | 0           |             |              |              |
| TWINS                                | W GULF        | 7          | 0           | 0           | 0           | 0           |             |              |              |
| NAGAI/RK W OF CAPE WEDGE             | W GULF        | 7          | 0           | 0           | 0           | 0           |             |              |              |
| EGG (SAND POINT)                     | W GULF        | 7          | 0           | 0           | 0           | 0           |             |              |              |
| UNGA/CAPE UNGA                       | W GULF        | 7          | 0           | 0           | 0           | 0           |             |              |              |
| OMEGA                                | W GULF        | 7          | 0           | 1           | 0           | 0           |             |              |              |
| WOSNESENSKI                          | W GULF        | 7          | 166         | 113         | 110         | 98          |             |              |              |
| HUNT                                 | W GULF        | 7          | 0           | 0           | 0           | 0           |             |              |              |
| HAGUE ROCK                           | W GULF        | 7          | 0           | 0           | 0           | 1           |             |              |              |
| SOZAVARIKA                           | W GULF        | 7          | 0           | 0           |             | 0           |             |              |              |
| SANAK                                | W GULF        | 7          | 0           | 0           | 0           | 0           |             |              |              |
| UMGA                                 | W GULF        | 7          | 0           | 0           | 0           | 0           |             |              |              |

| <b>Table 3 (continued) SITE NAME</b>                   | <b>REGION</b> | <b>RCA</b> | <b>2004</b> | <b>2006</b> | <b>2007</b> | <b>2008</b> | <b>2009</b> | <b>2010E</b> | <b>2010L</b> |
|--|---------------|------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|
| UNIMAK/CAPE LAZAREF                                    | E ALEU        | 7          | 0           |             | 0           | 0           |             |              |              |
| UNIMAK/OKSENOF POINT                                   | E ALEU        | 6          |             |             | 269         | 762         | 332         |              |              |
| UNIMAK/CAPE LUTKE                                      | E ALEU        | 7          | 0           | 0           | 0           | 0           |             |              |              |
| UNIMAK/SCOTCH CAP                                      | E ALEU        | 6          | 0           | 0           | 0           | 0           |             |              |              |
| Rock b/n Unimak/Sennett Point and Unimak/Cape Sarichef | E ALEU        | 6          |             | 19          | 6           | 0           |             |              |              |
| KALIGAGAN  | E ALEU        | 6          | 1           | 0           | 6           | 1           |             |              |              |
| UNIMAK/SENNETT POINT                                   | E ALEU        | 6          | 0           | 1           | 0           | 0           |             |              |              |
| BASALT ROCK  | E ALEU        | 6          | 1           | 4           | 0           | 0           |             |              |              |
| AKUN/AKUN BAY  | E ALEU        | 6          | 0           | 0           | 18          | 8           |             |              |              |
| AKUN/JACKASS POINT                                     | E ALEU        | 6          | 0           | 0           | 0           | 0           |             |              |              |
| AKUN/AKUN HEAD   | E ALEU        | 6          | 0           | 0           | 0           | 0           |             |              | 0            |
| AKUTAN/BATTERY POINT                                   | E ALEU        | 6          | 0           | 0           | 0           | 0           |             |              | 0            |
| AVATANAK   | E ALEU        | 6          |             | 15          | 42          | 0           |             |              |              |
| BABY   | E ALEU        | 6          | 0           | 4           | 0           | 0           |             |              | 0            |
| INNER SIGNAL   | E ALEU        | 6          | 38          | 0           | 47          | 54          |             |              | 28           |
| UNALASKA/PRIEST ROCK                                   | E ALEU        | 6          | 0           | 1           | 3           | 2           |             |              | 4            |
| UNALASKA/WHALEBONE CAPE                                | E ALEU        | 6          | 0           | 0           | 0           | 0           |             |              | 0            |
| UNALASKA/CAPE WISLOW                                   | E ALEU        | 6          | 0           | 0           | 0           | 0           |             |              | 0            |
| UNALASKA/CAPE STARICHKOF                               | E ALEU        | 6          | 0           | 0           | 0           | 0           |             |              | 0            |
| UNALASKA/KOVRIZHKA                                     | E ALEU        | 6          | 0           | 0           | 0           | 0           |             |              | 0            |
| UMNAK/CAPE IDAK  | E ALEU        | 6          |             | 0           | 0           | 0           |             |              | 0            |
| EMERALD  | E ALEU        | 6          | 0           |             | 0           | 0           |             |              | 0            |
| UMNAK/REINDEER POINT                                   | E ALEU        | 6          |             | 0           |             | 0           |             |              |              |
| UMNAK/CAPE CHAGAK                                      | E ALEU        | 6          |             | 0           |             | 0           |             |              |              |
| UMNAK/AGULIUK POINT                                    | E ALEU        | 6          |             | 0           |             | 0           |             |              | 0            |
| SAMALGA  | E ALEU        | 6          | 1           | 0           | 0           | 0           |             |              | 0            |
| TAGALAK  | C ALEU        | 4          | 91          | 134         | 162         | 86          |             |              | 53           |
| SILAK  | C ALEU        | 4          | 38          | 32          | 88          | 32          |             |              | 90           |
| ADAK/CAPE MOFFET                                       | C ALEU        | 4          | 0           | 0           | 0           | 0           |             |              | 0            |
| ADAK/ARGONNE POINT                                     | C ALEU        | 4          | 35          | 12          | 10          | 0           |             |              | 84           |
| BOBROF   | C ALEU        | 3          | 49          | 21          |             | 0           |             |              | 19           |

| <b>Table 3 (continued) SITE NAME</b> | <b>REGION</b> | <b>RCA</b> | <b>2004</b>  | <b>2006</b>  | <b>2007</b>  | <b>2008</b>  | <b>2009</b>  | <b>2010E</b> | <b>2010L</b> |
|--------------------------------------|---------------|------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| SEMISOPOCHNOI/PETREL                 | C ALEU        | 2          | 0            | 43           |              | 0            |              |              |              |
| SEMISOPOCHNOI/SW KNOB                | C ALEU        | 2          | 17           | 0            |              | 0            |              |              |              |
| SEMISOPOCHNOI/TUMAN POINT            | C ALEU        | 2          | 0            | 0            |              | 0            |              |              |              |
| SEGULA/GULA POINT                    | C ALEU        | 2          |              | 1            |              | 0            |              |              |              |
| AMLIA/CAPE MISTY                     | C ALEU        | 5          | 21           |              | 72           | 0            |              | 0            |              |
| KONIUJI/NORTH POINT                  | C ALEU        | 4          | 0            | 0            | 0            | 0            |              | 0            |              |
| CHUGUL                               | C ALEU        | 4          | 39           | 69           | 73           | 12           |              | 33           |              |
| IGITKIN/SW POINT                     | C ALEU        | 4          | 0            | 0            | 0            | 0            |              | 0            |              |
| ADAK/CRONE ISLAND                    | C ALEU        | 4          | 0            |              |              | 60           |              | 15           |              |
| KANAGA/CAPE CHUNU                    | C ALEU        | 3          | 9            |              | 82           | 69           | 18           | 21           |              |
| ILAK                                 | C ALEU        | 3          | 45           |              |              | 18           |              | 32           |              |
| SKAGUL/S. POINT                      | C ALEU        | 3          | 1            |              |              | 1            |              |              |              |
| OGLIUGA                              | C ALEU        | 3          | 49           |              |              | 0            |              | 2            |              |
| AMCHITKA/OMEGA POINT                 | C ALEU        | 2          | 0            | 0            | 0            | 0            |              |              |              |
| AMCHITKA/CHITKA POINT                | C ALEU        | 2          | 0            |              | 0            | 0            |              |              |              |
| AMCHITKA/BIRD                        | C ALEU        | 2          | 0            |              | 0            | 0            |              |              |              |
| TWIN ROCKS (KISKA)                   | C ALEU        | 2          | 13           |              |              | 1            |              |              |              |
| KISKA/SOUTH HEAD                     | C ALEU        | 2          | 0            | 0            |              | 0            |              |              |              |
| KISKA/WITCHCRAFT POINT               | C ALEU        | 2          | 0            |              |              | 7            |              |              |              |
| KISKA/GERTRUDE-BUKHTI                | C ALEU        | 2          | 0            | 0            |              | 0            |              |              |              |
| INGENSTREM ROCKS                     | W ALEU        | 1          | 0            | 1            |              | 0            |              |              |              |
| NIZKI                                | W ALEU        | 1          | 0            | 0            |              | 0            |              |              |              |
| DAN'S ROCKS                          | W ALEU        | 1          | 0            | 0            |              | 0            |              |              |              |
| <b>TOTAL OTHER WESTERN SITES</b>     |               |            | <b>1,600</b> | <b>2,231</b> | <b>3,012</b> | <b>3,060</b> | <b>1,125</b> | <b>1,439</b> | <b>540</b>   |

Table 4. Counts of adult and juvenile Steller sea lions at rookery (in bold) and haulout trend (1) and other sites in southeast Alaska (SEAK = RCA 11), 2002-2010. 2010E refers to the non-pup survey conducted 7 June-3 July 2010; 2010L refers to the movement survey conducted 10-13 July 2010. All are counts from aerial surveys using high-resolution, vertical photographs. For 2010L survey, X means site was skipped because of low recent counts and W refers to a site missed due to bad weather.

| <b>SITE NAME</b>           | <b>TREND</b> | <b>2002</b> | <b>2008</b> | <b>2009</b> | <b>2010E</b> | <b>2010L</b> |
|----------------------------|--------------|-------------|-------------|-------------|--------------|--------------|
| LITTLE ISLAND              |              |             | 0           | 0           | 0            | X            |
| POINT MARSH                |              | 104         | 4           | 0           | 2            | 61           |
| WEST ROCK                  |              | 640         | 841         | 869         | 700          | 375          |
| WOLF ROCK                  |              | 207         | 300         | 170         | 245          | 3            |
| SAKIE POINT                |              |             | 0           | 0           | 0            | X            |
| CAPE BARTOLOME             |              | 41          | 0           | 0           | 59           | 13           |
| CAPE ADDINGTON             |              | 1,074       | 718         | 9           | 542          | 616          |
| GRINDALL                   |              | 130         | 374         | 6           | 132          | 90           |
| TIMBERED                   |              | 442         | 288         | 4           | 444          | 438          |
| <b>HAZY</b>                | 1            | 2,050       | 1,686       | 2,457       | 1,642        | 1,570        |
| EASTERLY                   |              |             | 255         | 189         | 216          | 124          |
| CORONATION                 | 1            | 46          | 279         | 5           | 254          | 178          |
| South of Cape Ommaney      |              |             | 102         | 113         | 125          | 86           |
| CAPE OMMANEY               |              | 344         | 117         | 161         | 192          | 138          |
| LARCH BAY                  |              |             | 28          | 0           | 0            | 0            |
| SEA LION ROCK (PUFFIN BAY) |              | 264         | 0           | 124         | 113          | 16           |
| ETOLIN                     |              |             | 0           | 0           | 0            | X            |
| PATTERSON POINT            |              |             | 0           |             | 0            | X            |
| <b>BIALI ROCK</b>          | 1            | 626         | 408         | 616         | 488          | 509          |
| <b>FORRESTER COMPLEX</b>   | 1            | 3,699       | 2,894       | 4,742       | 3,385        | 3,152        |
| JACOB ROCK                 | 1            | 203         | 101         | 300         | 220          | 138          |
| KAIUCHALI (BIORKA)         |              | 46          | 31          | 5           | 18           | 26           |
| EMMONS                     |              |             |             |             | 0            | X            |
| HORN CLIFF                 |              |             | 0           | 0           | 0            | X            |
| YASHA                      |              | 920         | 379         | 612         | 450          | 1,516        |
| ST. LAZARIA                |              |             | 0           | 0           | 0            | X            |
| PINTA ROCKS                |              |             | 0           | 0           | 0            | X            |

| <b>Table 4 (continued) SITE NAME</b> | <b>TREND</b> | <b>2002</b> | <b>2008</b> | <b>2009</b> | <b>2010E</b> | <b>2010L</b> |
|--------------------------------------|--------------|-------------|-------------|-------------|--------------|--------------|
| TURNABOUT                            |              |             | 0           | 0           | 0            | 0            |
| ROUND ROCK                           |              |             | 0           | 0           | 0            | X            |
| THE BROTHERS                         | 1            | 981         | 765         | 537         | 828          | 608          |
| SEA LION ISLANDS                     |              |             | 137         | 298         | 271          | W            |
| POINT LULL                           |              |             | 153         | 162         | 0            | 0            |
| SAIL                                 |              | 0           | 3           | 496         | 0            | 980          |
| FALSE POINT PYBUS                    |              | 0           | 0           | 0           | 0            | X            |
| SUNSET                               |              | 348         | 384         | 323         | 400          | 0            |
| POINT LEAGUE (STEVENS PASSAGE)       |              | 0           | 1           | 0           | 0            | 0            |
| <b>WHITE SISTERS</b>                 | 1            | 1,156       | 1,132       | 1,435       | 1,557        | W            |
| TENAKEE CANNERY POINT                |              |             | 0           | 0           | 0            | X            |
| CAPE CROSS                           | 1            | 1           | 1           | 0           | 7            | 0            |
| TARR INLET                           |              |             |             |             | 0            | X            |
| MIST                                 |              |             | 0           | 0           | 0            | X            |
| POINT MARSDEN                        |              |             | 0           | 0           | 0            | X            |
| CAPE BINGHAM                         |              | 0           | 0           | 0           | 0            | X            |
| CIRCLE POINT                         |              |             | 0           | 0           | 0            | X            |
| THE SISTERS                          |              |             | 0           | 0           | 0            | X            |
| DOROTHY                              |              |             | 0           | 0           | 0            | X            |
| <b>GRAVES ROCK</b>                   | 1            | 1,001       | 1,305       | 1,442       | 1,057        | W            |
| INIAN                                |              | 206         | 116         | 2           | 175          | W            |
| POINT ISLET (POINT ROCK)             |              |             |             |             | 0            | X            |
| VENISA                               |              | 0           | 0           | 0           | 0            | X            |
| POINT CAROLUS                        |              | 0           | 0           | 0           | 0            | X            |
| BENJAMIN                             |              | 0           | 0           | 0           | 0            | X            |
| HARBOR POINT                         | 1            | 186         | 178         | 264         | 206          | 0            |
| SOUTH MARBLE                         |              | 238         | 786         | 1,010       | 1,458        | W            |
| MIDDLE PASS ROCK                     |              |             |             |             | 74           | W            |
| CASE (TLINGIT) POINT                 |              |             | 0           | 0           | 0            | X            |
| CAPE FAIRWEATHER                     | 1            |             | 0           | 0           | 0            | 0            |
| MET POINT                            |              |             | 0           | 0           | 0            | X            |
| ELDRED ROCK                          |              |             | 0           | 0           | 0            | X            |

| <b>Table 4 (continued) SITE NAME</b> | <b>TREND</b> | <b>2002</b> | <b>2008</b> | <b>2009</b> | <b>2010E</b> | <b>2010L</b> |
|--------------------------------------|--------------|-------------|-------------|-------------|--------------|--------------|
| GRAN (LEDGE) POINT                   |              | 331         | 583         | 638         | 516          | 166          |
| Total SEAK Trend-Sites               |              | 9,949       | 8,748       | 11,798      | 9,644        | 6,155        |
| Total SEAK Other Sites               |              | 5,335       | 5,597       | 5,188       | 6,132        | 4,648        |
| Total SEAK                           |              | 15,284      | 14,344      | 16,986      | 15,776       | 10,803       |

Table 5. Counts of Steller sea lion pups at rookeries (in bold) in Alaska in late June-July, 1990-2010. Pup counts at haulouts in 2010 are also shown, as are counts for pooled years (1990-92, 2001-02, and 2003-04). Counts from both observers on the ground and from high-resolution, vertical aerial photographs are included.

| <b>SITE NAME</b>         | <b>Region</b> | <b>RCA</b> | <b>1990-92</b> | <b>1994</b> | <b>1997</b> | <b>1998</b> | <b>2001-02</b> | <b>2003-04</b> | <b>2005</b> | <b>2009</b> | <b>2010</b> |
|--------------------------|---------------|------------|----------------|-------------|-------------|-------------|----------------|----------------|-------------|-------------|-------------|
| <b>FORRESTER COMPLEX</b> | SEAK          | 11         | 3,261          | 2,757       | 2,798       | 2,753       | 3,152          |                | 3,429       | 4,036       | 2,673       |
| <b>HAZY</b>              | SEAK          | 11         | 808            | 862         | 1,157       | 1,199       | 1,257          |                | 1,286       | 1,976       | 1,357       |
| <b>WHITE SISTERS</b>     | SEAK          | 11         | 95             | 151         | 205         | 282         | 403            |                | 520         | 847         |             |
| <b>GRAVES ROCK</b>       | SEAK          | 11         |                |             |             | 1           | 98             |                | 175         | 441         |             |
| <b>BIALI ROCK</b>        | SEAK          | 11         |                |             |             |             | 59             |                | 100         | 144         | 85          |
| YASHA                    | SEAK          | 11         |                |             |             |             |                |                |             |             | 9           |
| CAPE ADDINGTON           | SEAK          | 11         |                |             |             |             |                |                |             |             | 1           |
| TIMBERED                 | SEAK          | 11         |                |             |             |             |                |                |             |             | 1           |
| <b>SEAL ROCKS</b>        | E GULF        | 10         | 657            | 598         | 491         | 542         | 500            | 543            | 556         | 740         | 634         |
| <b>WOODED (FISH)</b>     | E GULF        | 10         |                | 305         | 120         | 147         | 86             | 173            | 159         | 178         | 224         |
| <b>CHISWELL</b>          | E GULF        | 10         |                |             |             |             | 54             |                | 44          | 64          | 64          |
| THE NEEDLE               | E GULF        | 10         |                |             |             |             |                |                |             |             | 22          |
| CAPE ST. ELIAS           | E GULF        | 10         |                |             |             |             |                |                |             |             | 15          |
| POINT ELRINGTON          | E GULF        | 10         |                |             |             |             |                |                |             |             | 4           |
| <b>OUTER (PYE)</b>       | C GULF        | 10         | 363            | 119         | 104         | 113         | 104            | 59             | 104         | 122         | 122         |
| <b>SUGARLOAF</b>         | C GULF        | 9          | 1,683          | 958         | 673         | 703         | 490            | 488            | 559         | 613         |             |
| <b>USHAGAT</b>           | C GULF        | 9          |                |             |             |             | 42             | 43             | 55          | 71          |             |
| <b>MARMOT</b>            | C GULF        | 9          | 1,611          | 804         | 762         | 642         | 515            | 505            | 433         | 509         |             |
| <b>CHOWIET</b>           | C GULF        | 8          | 636            | 625         |             | 234         | 387            | 368            | 432         | 360         |             |
| <b>CHIRIKOF</b>          | C GULF        | 8          | 656            | 325         |             | 184         | 225            | 189            | 123         | 216         |             |
| <b>ATKINS</b>            | W GULF        | 7          | 485            | 324         | 366         | 352         | 274            | 266            | 328         | 338         |             |
| <b>CHERNABURA</b>        | W GULF        | 7          | 211            | 139         |             | 54          | 138            | 82             | 153         | 244         |             |
| <b>JUDE</b>              | W GULF        | 7          |                |             |             |             | 182            | 187            | 206         | 270         |             |
| <b>PINNACLE ROCK</b>     | W GULF        | 7          | 794            | 652         |             | 639         | 769            | 663            | 643         | 702         |             |
| <b>CLUBBING ROCKS</b>    | W GULF        | 7          | 433            | 547         |             | 448         | 490            | 566            | 583         | 778         |             |

| Table 5 (continued) SITE NAME | Region | RCA | 1990-92 | 1994 | 1997 | 1998 | 2001-02 | 2003-04 | 2005 | 2009 | 2010 |
|-------------------------------|--------|-----|---------|------|------|------|---------|---------|------|------|------|
| <b>SOUTH ROCKS</b>            | W GULF | 7   |         |      |      |      | 36      |         | 44   | 60   |      |
| <b>SEA LION ROCK (AMAK)</b>   | E ALEU | 6   |         |      |      | 134  | 161     | 185     | 158  | 185  |      |
| <b>UGAMAK COMPLEX</b>         | E ALEU | 6   | 847     | 574  | 589  | 558  | 570     | 686     | 769  | 909  |      |
| <b>AKUN/BILLINGSHEAD</b>      | E ALEU | 6   | 63      | 69   |      | 56   | 55      | 85      |      | 144  |      |
| <b>AKUTAN/CAPE MORGAN</b>     | E ALEU | 6   | 442     | 631  |      | 505  | 508     | 497     | 657  | 688  | 730  |
| <b>BOGOSLOF</b>               | E ALEU | 6   | 501     | 302  | 281  | 220  | 256     | 278     | 225  | 282  |      |
| <b>OGCHUL</b>                 | E ALEU | 6   |         | 94   |      | 42   | 57      | 69      | 78   | 90   | 116  |
| <b>ADUGAK</b>                 | E ALEU | 6   | 262     | 180  |      | 135  | 172     | 185     | 185  | 276  |      |
| UNALASKA/CAPE IZIGAN          | E ALEU | 6   |         |      |      |      |         |         |      |      | 41   |
| THE PILLARS                   | E ALEU | 6   |         |      |      |      |         |         |      |      | 1    |
| <b>YUNASKA</b>                | C ALEU | 5   | 230     | 217  | 192  | 161  | 145     | 145     |      | 170  | 185  |
| <b>SEGUAM/SADDLERIDGE</b>     | C ALEU | 5   | 684     | 444  | 463  | 479  | 468     | 517     | 530  | 540  | 518  |
| AGLIGADAK                     | C ALEU | 5   |         |      |      | 0    |         | 2       | 0    | 0    | 1    |
| AMLIA/SVIECH. HARBOR          | C ALEU | 5   |         |      |      | 13   | 22      | 28      | 28   | 34   | 30   |
| AMLIA/EAST CAPE               | C ALEU | 5   |         |      |      |      |         |         |      |      | 2    |
| <b>KASATOCHI/NORTH POINT</b>  | C ALEU | 4   | 178     | 215  | 268  | 247  | 302     | 354     | 372  | 394  | 354  |
| <b>ADAK</b>                   | C ALEU | 4   | 137     | 327  |      | 340  | 395     |         | 311  | 338  | 320  |
| <b>KANAGA/SHIP ROCK</b>       | C ALEU | 4   |         |      |      |      | 113     |         | 221  | 214  | 214  |
| KANAGA/CAPE CHUNU             | C ALEU | 4   |         |      |      |      |         |         |      |      | 3    |
| TANAGA/CAPE SASMIK            | C ALEU | 4   |         |      |      |      |         |         |      |      | 3    |
| OGLODAK                       | C ALEU | 4   |         |      |      |      |         |         |      |      | 3    |
| SILAK                         | C ALEU | 4   |         |      |      |      |         |         |      |      | 1    |
| TAGALAK                       | C ALEU | 4   |         |      |      |      |         |         |      |      | 1    |
| <b>GRAMP ROCK</b>             | C ALEU | 3   | 448     | 425  |      | 456  | 444     | 439     | 387  | 332  | 299  |
| <b>TAG</b>                    | C ALEU | 3   | 357     | 234  |      | 238  | 155     | 150     | 144  | 130  | 135  |
| <b>ULAK/HASGOX POINT</b>      | C ALEU | 3   | 790     | 638  |      | 521  | 332     | 257     | 338  | 272  | 264  |
| <b>AMCHITKA/COLUMN ROCKS</b>  | C ALEU | 2   | 148     | 114  |      | 70   | 52      | 45      | 44   | 40   |      |
| <b>AYUGADAK</b>               | C ALEU | 2   | 163     | 142  |      | 89   | 90      | 66      | 83   | 44   |      |
| <b>KISKA/LIEF COVE</b>        | C ALEU | 2   | 221     | 233  |      | 179  | 158     | 101     | 115  | 80   |      |
| <b>KISKA/CAPE ST STEPHEN</b>  | C ALEU | 2   | 212     | 120  |      | 54   | 71      | 75      | 82   | 91   |      |

| <b>Table 5 (continued) SITE NAME</b> | <b>Region</b> | <b>RCA</b> | <b>1990-92</b> | <b>1994</b> | <b>1997</b> | <b>1998</b> | <b>2001-02</b> | <b>2003-04</b> | <b>2005</b> | <b>2008</b> | <b>2010</b> |
|--------------------------------------|---------------|------------|----------------|-------------|-------------|-------------|----------------|----------------|-------------|-------------|-------------|
| <b>BULDIR</b>                        | W ALEU        | 1          | 381            | 120         | 120         | 122         | 42             |                | 26          | 7           | 1           |
| <b>AL Aid</b>                        | W ALEU        | 1          |                |             |             |             |                |                | 27          | 20          | 10          |
| <b>AGATTU/CAPE SABAK</b>             | W ALEU        | 1          | 1,127          |             | 379         | 314         | 212            | 159            | 113         | 83          | 84          |
| <b>AGATTU/GILLON POINT</b>           | W ALEU        | 1          |                |             | 258         | 213         | 159            | 174            | 157         | 142         | 106         |
| <b>ATTU/CAPE WRANGELL</b>            | W ALEU        | 1          |                |             | 222         | 154         | 75             | 47             | 47          |             | 33          |
| <b>WALRUS</b>                        | BERING        |            | 63             | 61          | 35          |             | 39             |                | 29          |             | 14          |

Table 6. Counts of Steller sea lion adults and juveniles (A) and pups (B) at trend sites in one region in the range of the eastern distinct population segment (DPS; southeast Alaska), and six regions in the western DPS in Alaska during June-July surveys from 1990 to 2010. Adult and juvenile counts in 2004-2010 have been adjusted to account for resolution and orientation differences with earlier counts. 2010E refers to the 7 June-3 July 2010 survey; 2010L refers to 10-13 July 2010 survey. Western Aleutian counts in 2009 include counts from both 2008 and 2005.

A. Adult and Juvenile Counts

| Year  | Eastern DPS | Western DPS in Alaska |         |         |                  |         |         | Total  |
|-------|-------------|-----------------------|---------|---------|------------------|---------|---------|--------|
|       | in Alaska   | Gulf of Alaska        |         |         | Aleutian Islands |         |         |        |
|       | SEAK        | Eastern               | Central | Western | Eastern          | Central | Western |        |
| 1991  | 8,034       | 4,812                 | 7,872   | 5,338   | 5,283            | 8,656   | 4,601   | 36,562 |
| 1992  | 8,014       | 3,981                 | 7,358   | 5,112   | 5,707            | 7,633   | 4,199   | 33,991 |
| 1994  | 9,001       | 3,612                 | 6,505   | 5,718   | 5,664            | 6,909   | 3,114   | 31,522 |
| 1996  | 8,230       | 2,450                 | 5,400   | 5,356   | 5,967            | 6,368   | 3,334   | 28,875 |
| 1998  | 8,693       | 2,158                 | 4,806   | 5,367   | 5,774            | 7,017   | 2,786   | 27,908 |
| 2000  | 9,855       | 2,102                 | 4,555   | 3,996   | 4,990            | 6,560   | 1,633   | 23,836 |
| 2002  | 9,949       | 2,615                 | 4,594   | 4,617   | 5,261            | 6,547   | 1,196   | 24,829 |
| 2004  |             | 3,015                 | 4,028   | 5,233   | 5,991            | 6,885   | 1,286   | 26,438 |
| 2006  |             | 3,101                 |         |         | 6,031            |         |         |        |
| 2007  |             | 2,760                 |         |         |                  |         |         |        |
| 2008  | 8,748       | 4,065                 | 4,420   | 5,558   | 6,405            | 5,817   | 895     | 27,160 |
| 2009  | 11,798      | 3,501                 |         |         |                  |         |         |        |
| 2010E | 9,644       | 3,204                 | 4,333   |         |                  |         |         |        |
| 2010L |             | 4,823                 |         |         |                  |         |         |        |

B. Pup Counts

|           |       |     |       |       |       |       |     |       |
|-----------|-------|-----|-------|-------|-------|-------|-----|-------|
| 1990-1992 | 4,164 |     | 4,904 | 1,923 | 2,115 | 3,568 |     |       |
| 1994      | 3,770 | 903 | 2,831 | 1,662 | 1,756 | 3,109 |     |       |
| 1997      |       | 611 |       |       |       |       | 979 |       |
| 1998      | 4,235 | 689 | 1,876 | 1,493 | 1,474 | 2,834 | 803 | 9,169 |
| 2001-2002 | 4,877 | 586 | 1,721 | 1,671 | 1,561 | 2,612 | 488 | 8,639 |
| 2003-2004 |       | 716 | 1,609 | 1,577 | 1,731 |       |     |       |
| 2005      | 5,510 | 715 | 1,651 | 1,707 | 1,921 | 2,551 | 343 | 8,888 |
| 2009      | 7,444 | 918 | 1,821 | 2,062 | 2,300 | 2,436 | 279 | 9,816 |
| 2010      |       | 858 |       |       |       |       | 224 |       |

Figure 1. Terrestrial rookery and haulout sites in the range of the eastern and western distinct population segments (=stocks) of Steller sea lions in Alaska surveyed in 2010 and used in the analysis of population trends. The eastern and western stocks breed on rookeries east and west of 144°W, respectively. Boundaries of the eastern, central, and western regions of the Gulf of Alaska and Aleutian Islands are thick, solid lines. Boundaries of rookery cluster areas (RCAs 1-11) are dashed lines.

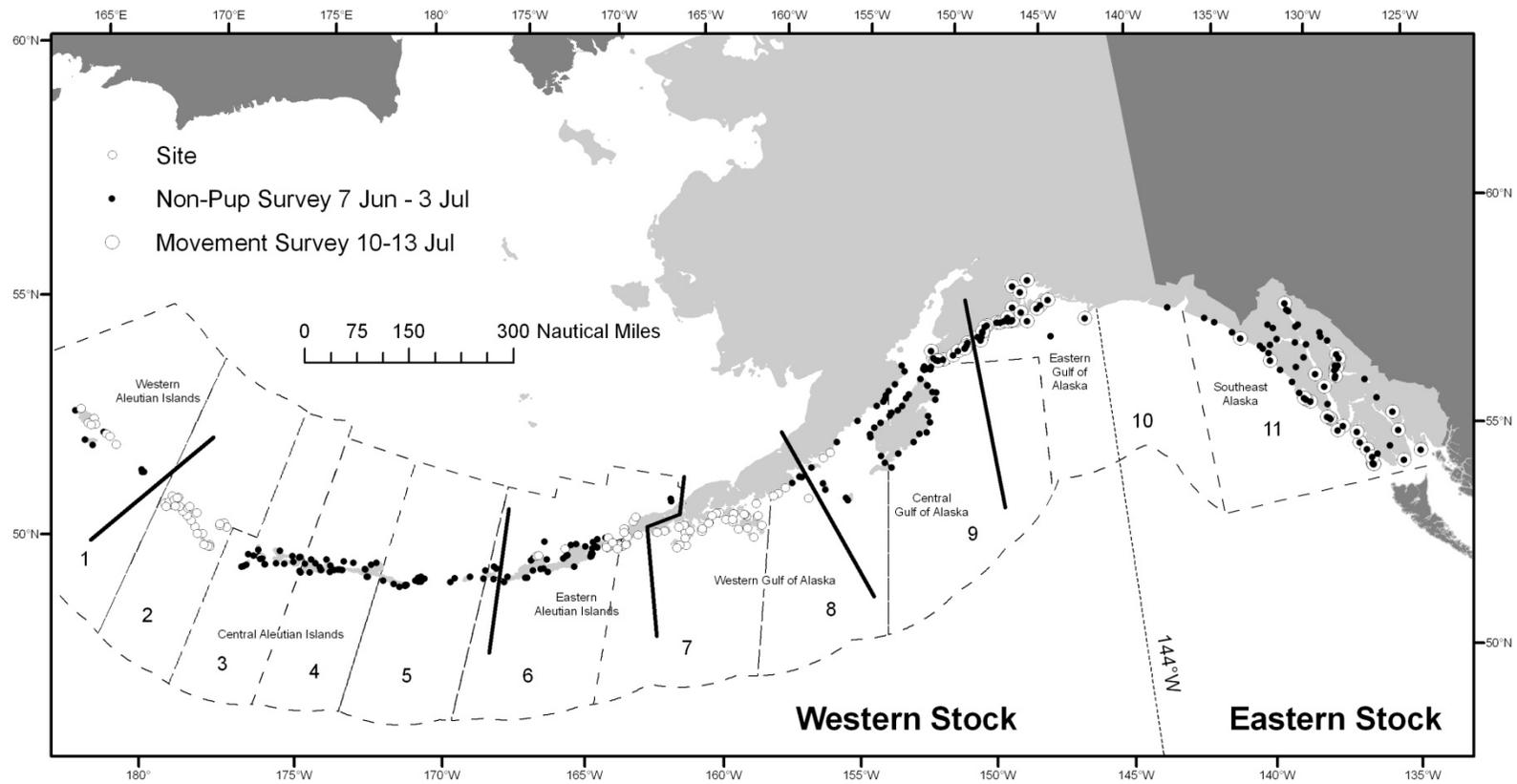


Figure 2. Counts of adult and juvenile Steller sea lions, 1990-2010, at trend sites in RCAs 1-3 (A), RCAs 4-5 (B), RCAs 6-7 (C), and RCAs 8-9 (D). RCA 1 is the same as the W ALEU and RCAs 2-5 are the same as the C ALEU. RCA 6 is equivalent to the E ALEU and was divided into western (Samalga Pass through Unalaska Island including rookeries on Adugak, Ogchul, and Bogoslof Islands), central (Krentizen Islands including rookeries on Akun, Akutan and Ugamak Islands), and Bering (Unimak and Amak Islands including the rookery on Sea Lion Rock) portions. RCA 7 is equivalent to the W GULF, and RCAs 8-9 are equivalent to the C GULF. Trend site totals in 2004-2010 were adjusted to account for differences in film resolution and orientation relative to earlier counts in the time series (Fritz and Stinchcomb 2005).

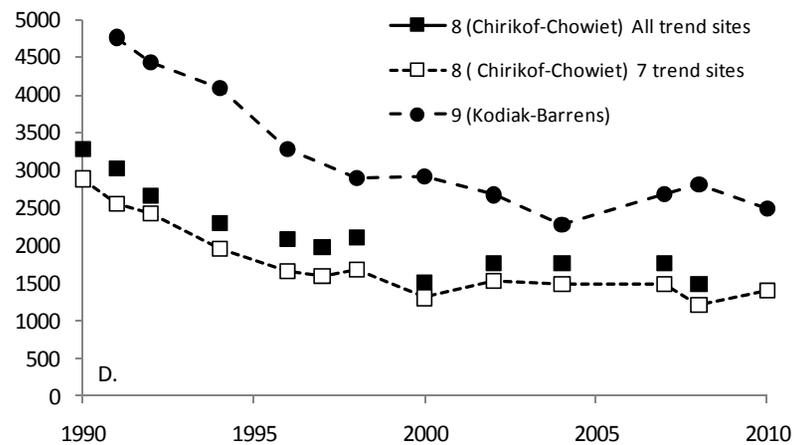
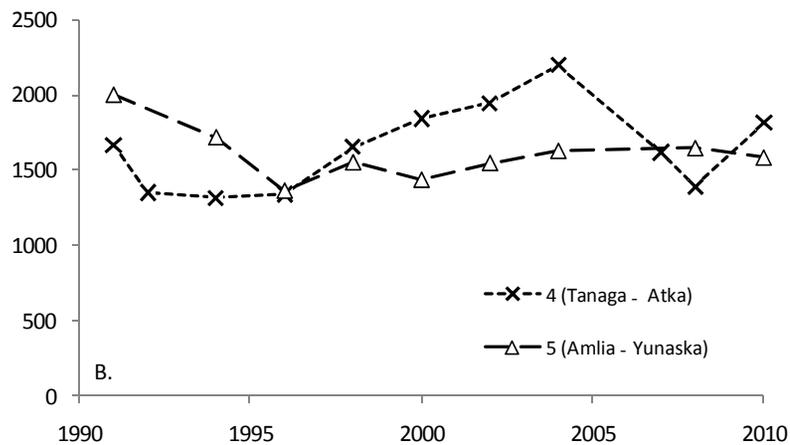
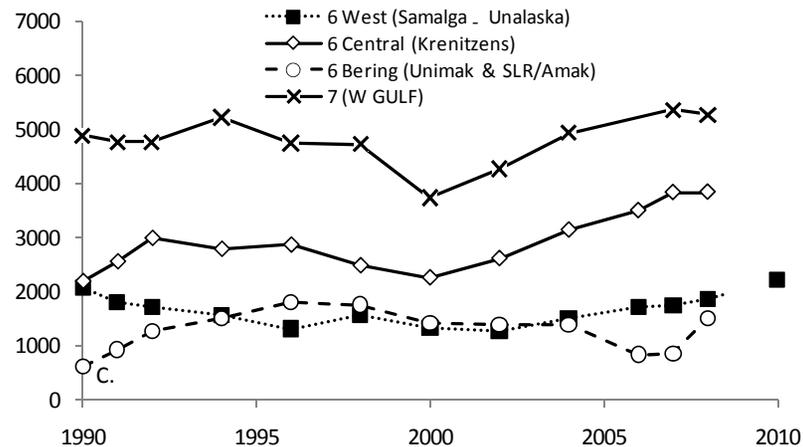
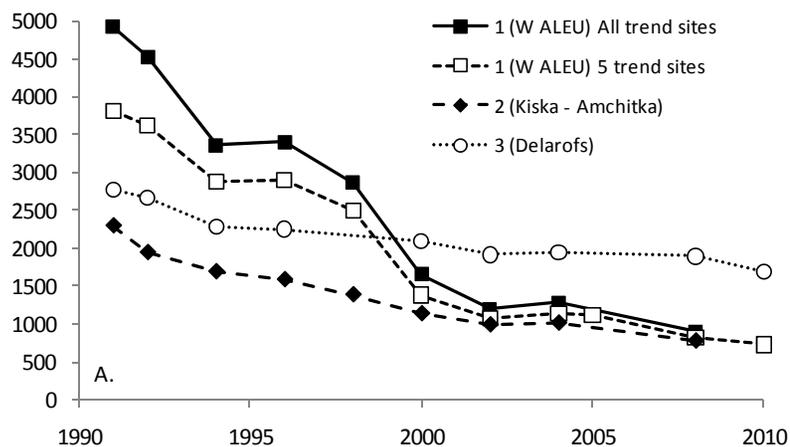


Figure 3. Counts of adult and juvenile Steller sea lions, 1990-2010, at trend sites in RCA 10 (A) and RCA 11 (B). RCA 10 is similar to the E GULF, and RCA 11 is equivalent to SEAK. In A, RCA 10 trend site totals for both the early non-pup and late movement surveys in 2010 are shown. In B, 3 different RCA 11 trend site totals are shown: 1) all trend sites using the early 2010 non-pup survey, 2) all trend sites but not including White Sisters and Graves which were missed in the late 2010 movement survey, and using the early 2010 counts, and 3) all trend sites but not including White Sisters and Graves and using the late 2010 counts. Trend site totals in 2004-2010 were adjusted to account for film resolution and orientation relative to earlier counts in the time series (Fritz and Stinchcomb 2005).

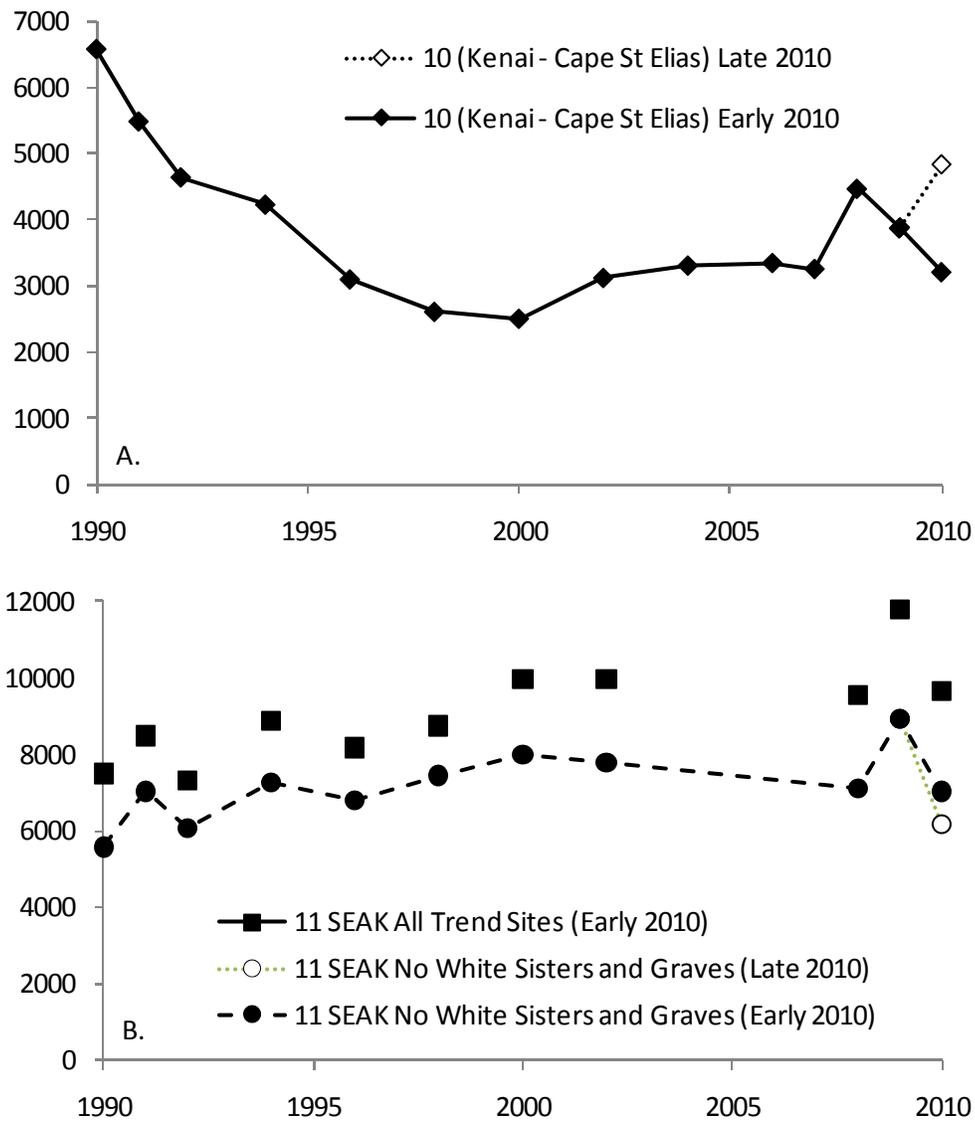


Figure 4. Counts of Steller sea lion pups, 1990-2010, at rookeries in RCAs 1-3 (A), RCAs 4-5 (B), RCAs 6-7 (C), RCAs 8-9 (D), RCA 10 (E), and RCA 11 (F). RCA 1 is the same as the W ALEU and RCAs 2-5 are the same as the C ALEU. RCAs 6 and 7 are equivalent to the E ALEU and W GULF, respectively, while RCAs 8-9 are equivalent to the C GULF. RCAs 10 and 11 are equivalent to the E GULF and SEAK, respectively.

